

Remarks/Arguments

New Claims 21 and 22

New claims 21 and 22 were added to vary the scope of the independent claims. Claim 21 adds the element of: “wherein the at least one stiffening segment covers less than the entire inner and outer circumferential edges,” to elements of the original Claims 1-5. This element is described in paragraph [0021] of the specification. For example: “In a further alternative design, instead of a complete stiffening ring, only individual elements which are not joined to one another may also be distributed, these elements having a lesser deformability than the base ring, but, like the stiffening ring described above, being of a lesser height than the base ring.” “Such elements may be ring segments...” Therefore, no new matter has been added.

Claim 22 adds the element of: “wherein the at least one stiffening segment is disposed within the base ring in a circumferential direction and is at least partially uncovered by the base ring,” to elements of the original Claims 1-5. This element is described in paragraph [0021] of the specification. For example: “It may be sufficient, and advantageous for the purpose of saving material, if a material having a lesser deformability than the base ring is provided which is distributed at several locations in the circumferential direction.” “Such elements may be ring segments or also, for example, plates or discs of a solid material which are cast into the elastic material of the base ring.” Therefore, no new matter has been added.

Furthermore, as indicated in MPEP 2111, “the pending claims must be given the broadest reasonable interpretation consistent with the specification”. As such, Applicants respectfully request entry of the new claims since the initial novelty search, viewing Claims 1-5 as broadly as reasonable, would encompass Claims 21 and 22.

Amended Claim 2

Amended Claim 2 recites elements of original claims 1, 2, and 5. In addition, the limitation of “hard” was added to the limitation of a plastic stiffener. Hard plastics for the stiffener are described in paragraph [0017] of the specification.

Rejection of Claims 19 and 20 under 35 U.S.C. § 112 first paragraph

The Examiner rejected Claims 19 and 20 under 35 U.S.C. 112, first paragraph, as containing subject matter, which was not described in the specification. Applicants have amended paragraph [0020] in the specifications to describe the aspects recited in Claims 19 and 20. Applicants respectfully disagree that the specification teaches that when metal is used for the stiffening ring, the protective layer must be PTFE. Paragraph [0024] states: “Figures 1, 2 and 3 show alternative versions of the flat sealing ring 1 according to the invention ... The protective layer 4 is expediently composed of a PTFE film which protects the elastically deformable material 6 against attack by chemically aggressive fluid.” The specification states that in the versions shown, including Figure 3, which shows the stiffening ring of hard plastic or metal, layer 4 is PTFE. The specification is describing examples of the present invention and does not state or imply that the protective layer must be PTFE for all cases when the stiffening ring is hard plastic or metal.

Applicants respectfully request that the rejections be removed.

The Rejection of Claims 1, 2, 5, 6, 9, 10, and 13-18 Under 35 U.S.C. §102(b)

The Examiner rejected Claims 1, 2, 5, 6, 9, 10, and 13-18 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,859,061 (Reid). Applicants traverse the rejection as follows.

Anticipation requires that all of the elements of the claim be taught within the four corners of a single reference.

Reid does not disclose a protective layer separate from a stiffening ring

Amended Claim 2 recites: “...the ring (1) having an elastically deformable base ring (2), a stiffening ring (3, 3’, 3’’) for limiting compression of the base ring (2), and at least one protective layer (4), wherein the at least one protective layer (4) covers at least a portion of the base ring (2)...” That is, Claim 2 recites three separate elements: a base ring, a protective layer, and a stiffening ring. Assuming *arguendo* that Reid discloses a stiffening ring, the Examiner admits in the Office Action that Reid discloses “...a one-piece protective layer and stiffening

ring..." (Page 2, item No. 4). That is, Reid teaches two elements, not three elements: a base ring, and a combination protective layer and a stiffening ring. Reid shows this configuration in Figures 2 through 6.

Reid does not teach a stiffening ring of hard plastic or metal

Claim 2 recites: "wherein the stiffening ring (3, 3', 3") comprises hard plastic or metal," As noted above, Reid teaches a one-piece protective layer and stiffening ring. Reid teaches the use of "Teflon" for the single piece, but contains no teaching regarding the use of a hard plastic or metal for the single piece.

Reid does not teach all the elements of amended Claim 2. Therefore, Reid does not anticipate Claim 2. Claim 1 has been cancelled. Claims 5, 6, 9, 10, and 13-18, dependent from Claim 2, also are novel with respect to Reid. Applicants request that the rejections be removed.

Rejection of Claims 1-3 under 35 U.S.C. §102(b)

The Examiner rejected Claims 1-3 under 35 U.S.C. §102(b) as being unpatentable over U.S. Patent No. 3,531,133 (Sheesley). Applicants traverse the rejection as follows.

Anticipation requires that all of the elements of the claim be taught within the four corners of a single reference.

Sheesley does not disclose a protective layer

Amended Claim 2 recites: "...at least one protective layer (4), wherein the at least one protective layer (4) covers at least a portion of the base ring (2)..." The Examiner admits in the Office Action that Sheesley does not disclose a protective layer over the base ring. (Page 3, item No. 8). Sheesley discloses a seal 23 and retainer rings 21 and 22. However, Sheesley clearly does not disclose a protective layer over the seal or rings.

Sheesley does not teach all the elements of amended Claim 2. Therefore, Sheesley does not anticipate Claim 2. Claim 1 has been cancelled. Claim 3 dependent from Claim 2, also is novel with respect to Sheesley. Applicants request that the rejections be removed.

Rejection of Claim 4 under 35 U.S.C. §103(a)

The Examiner rejected Claim 4 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,531,133 (Sheesley). Applicants traverse the rejection as follows.

Amended Claim 2 is patentable over Sheesley, since Sheesley does not teach, suggest, or motivate all the elements of Claim 2. Specifically, Sheesley does not teach, suggest, or motivate a protective layer. Claim 4, dependent from Claim 2, also is patentable over Sheesley. Applicants request that the rejection be removed.

Rejection of Claims 5-7, 9-11, and 13-16 under 35 U.S.C. §103(a)

The Examiner rejected Claims 5-7, 9-11, and 13-16 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,531,133 (Sheesley) in view of Patent No. 2,580,546 (Hobson).

The Claim 5 element of a protective layer has been added to amended Claim 2. Applicants traverse the rejection as follows.

The references cited by the Examiner, considered individually and collectively, do not contain sufficient teaching, suggestion, or motivation to combine/modify the references to create the present invention as recited in Claim 2

“To establish a *prima facie* case of obviousness three criteria must be met. First, there must be some suggestion or motivation to modify the reference. Second, the reference(s) must provide a reasonable expectation of success. The third requirement for a *prima facie* case of obviousness is that the reference must teach or suggest all limitations of the claim at issue. The teaching or suggestion to make the combined combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure.” *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). “Hence, elements of separate patents cannot be combined when there is no suggestion of such combination in those patents. *Panduit Corp. v. Dennison Manufacturing Co.*, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987).”

Hobson teaches adding an extra layer to his seal solely for the purpose of protecting other layers of his seal from deterioration: “The present invention thus resides essentially in providing a protective envelope or jacket made of “Teflon” or other plastic and chemically inert material

which surround a gasket made of any suitable material and having any desired construction. The jacket serves to protect the gasket against the action of any acids, gases or other corrosive substance..." (Col. 3, lines 17-24).

Sheesley acknowledges that deterioration of an elastomeric portion of a seal can be a problem. However, Sheesley does not suggest or motivate modifying his invention to add a protective layer. Rather, Sheesley teaches: "The arrangement of metal-to-metal seals just inside and outside of the elastomeric seal permits use under higher pressures, in that a seal may continue even on partial deterioration of the rubber (or similar material) portion 24." (Col. 3, lines 63-66). Also: "Further, compression type seals would occur between the flange faces and the retainer rings 21, 22. This effectively bars leakage of the elastomeric seal 30." (Col. 3, lines 57-59). "This permits the retainer rings to act as seals as well as functioning as non-extrusion rings for the elastomeric or plastic sealant material." (Col. 3, lines 59-61). Thus, Sheesley discloses the use of the retainer rings 21 and 22 to protect the elastomeric material.

Sheesley teaches against a protective coating

Sheesley teaches a solution to the problem of deterioration of elastomeric material in a seal (the use of retainer rings) that is diametrically opposed to Hobson's solution of a protective layer. That is, Sheesley rejects the need for any type of protective coating on the elastomeric material by clearly teaching that the retainer rings will provide a seal regardless of the condition of the elastomeric material. "...a seal may continue *even on partial deterioration of the rubber (or similar material) portion 24* (emphasis added)." (Col. 3, lines 63-66). Sheesley's retainer rings are a fundamental aspect of his invention and perform a plurality of functions including holding the seal in place during usage, facilitating compression of the elastomeric material, and sealing around the elastomeric material. Adding a protective layer to Sheesley would not add any desired functionality (the retainer rings protect the elastomeric material and Sheesley teaches that the retainer rings provide a necessary seal even in the event the elastomeric material deteriorates) and would add to the complexity and cost of producing Sheesley's invention.

The Examiner has applied impermissible hindsight in combining Sheesley and Hobson

“Moreover, deficiencies of the cited references cannot be remedied by general conclusions about what is “basic knowledge,” or “common sense.” *Id.* Indeed, “to imbue one of ordinary skill in the art with knowledge of the invention … when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.” *Id; W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303 (Fed. Cir. 1983).

Hobson has presented one solution to the problem of deterioration of elastomeric seals (the use of a protective layer) and contains no teaching, suggestion, or motivation to employ retainer rings to provide a seal, such as taught by Sheesley. That is, Hobson has no teaching, suggestion, or motivation to modify his invention by adding a retainer ring (stiffening ring). On the other hand, Sheesley has presented another solution to the problem of deterioration of elastomeric seals (the use of a retainer rings to seal around the elastomeric material) and contains no teaching, suggestion, or motivation to employ a protective layer, such as taught by Hobson. That is, Sheesley has no teaching, suggestion, or motivation that his retainer rings are in any way inadequate or that additional means are needed to protect the elastomeric material of his seal, for example, by modifying his invention to add a protective layer. Therefore, the Examiner has applied impermissible hindsight to provide the motivation to combine Sheesley with Hobson.

Claim 2 is patentable over Sheesley in view of Hobson. Claims 6, 10, 14, and 16 have been cancelled. Claims 5, 7, 9, 11, 13, and 15, dependent from Claim 2, also are patentable over the cited prior art. Applicants request that the rejection be removed.

Rejection of Claims 8 and 12 under 35 U.S.C. §103(a)

The Examiner rejected Claims 8 and 12 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,531,133 (Sheesley) as applied to claim 4, and further in view of Patent No. 2,580,546 (Hobson). Applicants traverse the rejection as follows.

Claim 2 is patentable over Sheesley in view of Hobson, as argued above. Claim 4 does not cure the defects of Sheesley in view of Hobson with respect to Claim 2. Claims 8 and 12,

dependent from Claim 2, also are patentable over the cited prior art. Applicants request that the rejection be removed.

Rejection of Claims 3, 4, 7, 8, 11, 12, 19, and 20 under 35 U.S.C. §103(a)

The Examiner rejected Claims 3, 4, 7, 8, 11, 12, 19, and 20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 2,859,061 (Reid). Applicants traverse the rejection as follows.

“To establish a *prima facie* case of obviousness three criteria must be met. First, there must be some suggestion or motivation to modify the reference. Second, the reference(s) must provide a reasonable expectation of success. The third requirement for a *prima facie* case of obviousness is that the reference must teach or suggest all limitations of the claim at issue. The teaching or suggestion to make the combined combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure.” *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As argued regarding the rejection of Claims 1, 2, 5, 6, 9, 10, and 13-18 under 35 U.S.C. §102(b) as being anticipated by Reid, Reid does not teach, suggest, or motivate the amended Claim 2 elements of: a separate base ring, stiffening ring, and protective layer; or a stiffening ring made of hard plastic or metal. Therefore, Reid does not meet the third requirement for a *prima facie* case of obviousness regarding Claim 2.

Further, Reid does not teach, suggest, or motivate modifying his invention to include a separate base ring, stiffening ring, and protective layer or stiffening ring made of hard plastic or metal. The integral nature of Reid’s protective layer and stiffening ring are essential to his invention. That is, the integral nature of the layer and ring are an unalterable result of the manufacturing processes disclosed by Reid, for example, in Figures 7-18. Reid provides no instruction for creating anything other than an integral layer and ring and contains no teaching that such an arrangement is in any way unsatisfactory. Further, the use of a hard plastic or metal would be anathema to Reid’s invention, since hard plastic and metal do not exhibit the characteristics that Reid discloses for his protective layer, for example, flexibility and

deformability as taught in col. 4, lines 16 and 17. Therefore, the Examiner has applied impermissible hindsight to provide the motivation to modify Reid.

Claim 2 is patentable over Reid. Therefore, Claims 3, 4, 7, 8, 11, 12, 19, and 20, dependent from Claim 2, also are patentable over Reid.

New Claims 21 and 22

New Claim 21 recites: wherein the at least one stiffening segment covers less than the entire inner and outer circumferential edges.” None of Reid, Sheesley, or Hobson teach, suggest, or motivate this element. Hobson does not teach a stiffening segment. Assuming *arguendo* that Reid and Sheesley teach a stiffening segment, every example and figure in these references discloses complete circumferential stiffening segments. For example, Figure 1 of Reid.

Claim 22 recites: “wherein the at least one stiffening segment is disposed within the base ring in a circumferential direction and is at least partially uncovered by the base ring,” and “and at least one protective layer (4).” Hobson does not teach a stiffening segment. Reid does not teach a stiffening segment disposed within the base ring. Reid’s “lip” is always on a circumference, at least because of the manufacturing processes he teaches. Sheesley teaches an imbedded stiffener, but does not teach a protective layer.

Applicants submit that Claims 21 and 22 are novel with respect to Reid, Sheesley, and Hobson. Further, Applicants have shown that Claim 2 is patentable over any combination of Reid, Sheesley, and Hobson. Therefore, Applicants submit that using the same rational applied to Claim 2, Claims 21 and 22 also are patentable over any combination of Reid, Sheesley, and Hobson.

Attorney Docket No.WSP:219US
U.S. Patent Application No. 10/696,840
Reply to Office Action of December 15, 2004
Date: April 13, 2005

Conclusion

Applicant respectfully submits that all pending claims are now in condition for allowance, which action is courteously requested.

Respectfully submitted,



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Dated: April 13, 2005